# SCHEMATIC DIAGRAM

CRUMAR®

*Musical Instruments*

**mod. d.p. 50**

| | |
|---|---|
| ⊙-< | FEMALE CONNECTOR SYMBOL (es. J 2/1) |
| ⊙→ | PLUG IN CONNECTOR SYMBOL |
| ○ | WIRE SOLDERING POINT |
| □ | TEST POINT ( T P... ) |
| • | CONNECTING POINT (ON p.c.b.) |
| ▭ | METALLIC FILM RESISTOR 1% |

ALL resistors 1/4 w unless otherwise indicated

ALL tabswitches shown in OFF position

ALL keyswitches shown in OFF position

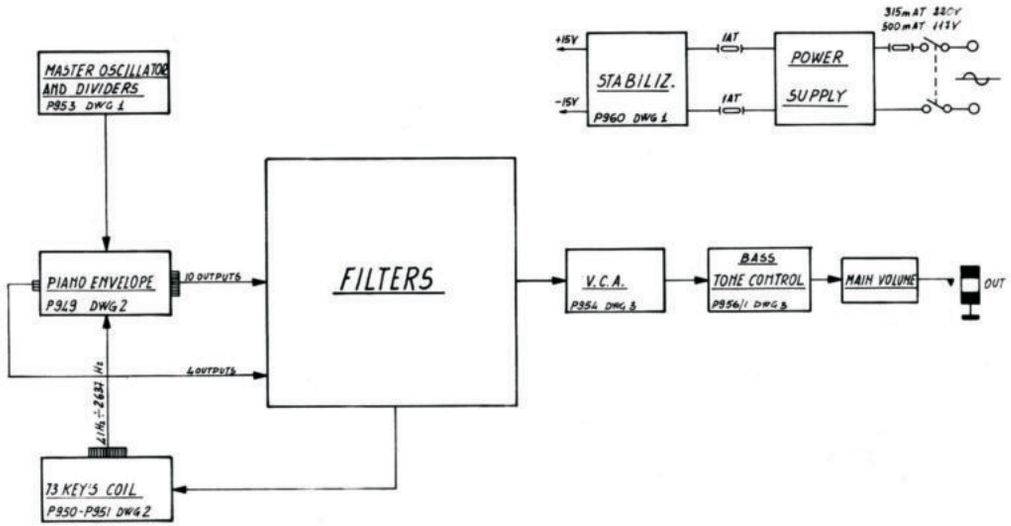
See part list for component part numbers

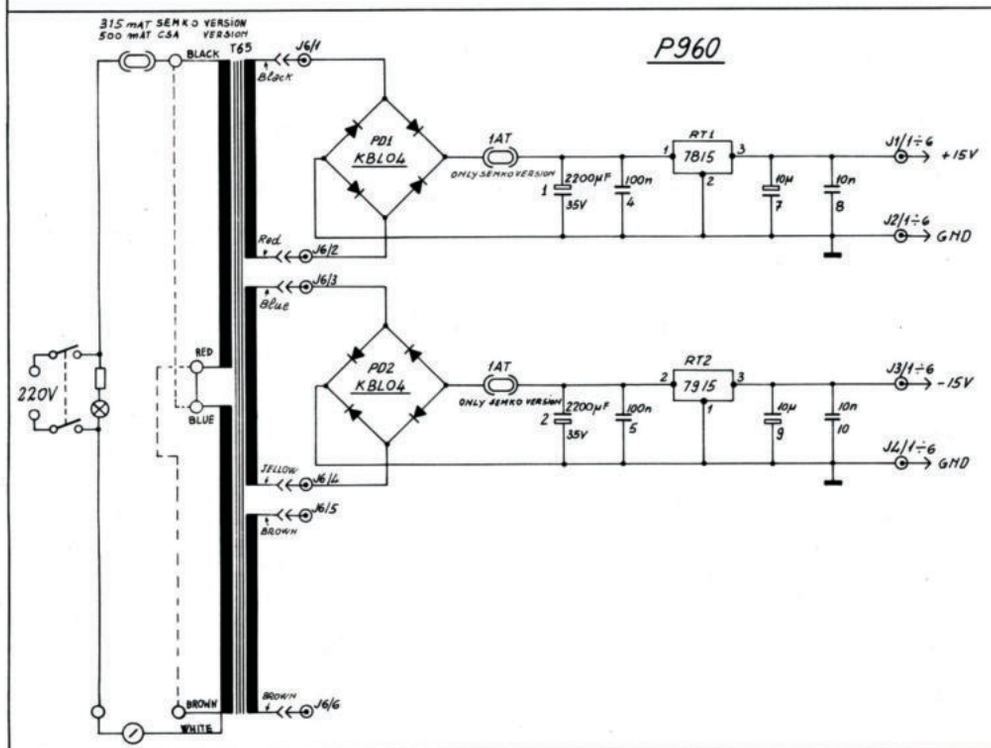
CRUMAR RESERVES THE RIGHT TO CHANGE SPECIFICATIONS AND DESIGNS, WITHOUT NOTICE AND LIABILITY.

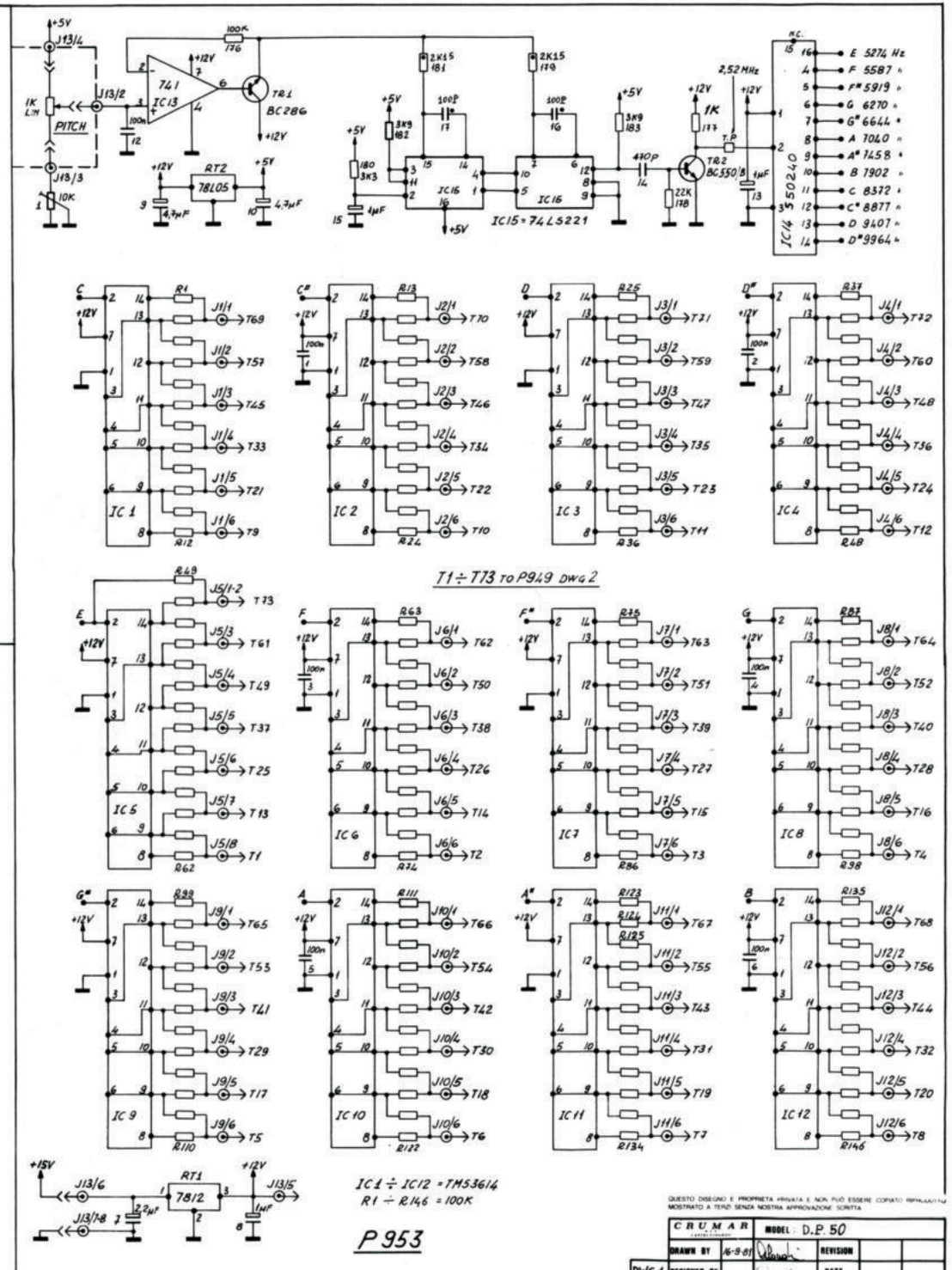
# SCHEMATIC DIAGRAM

**mod. d.p. 50**

# BLOCK DIAGRAM

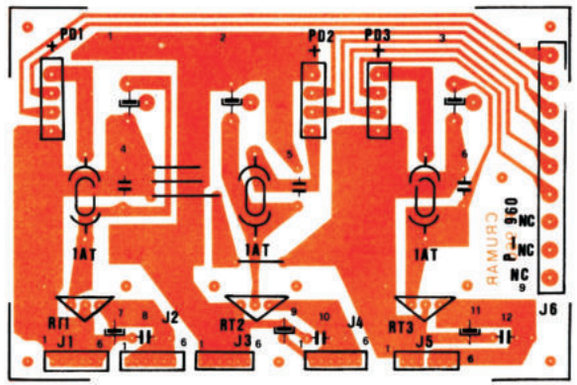


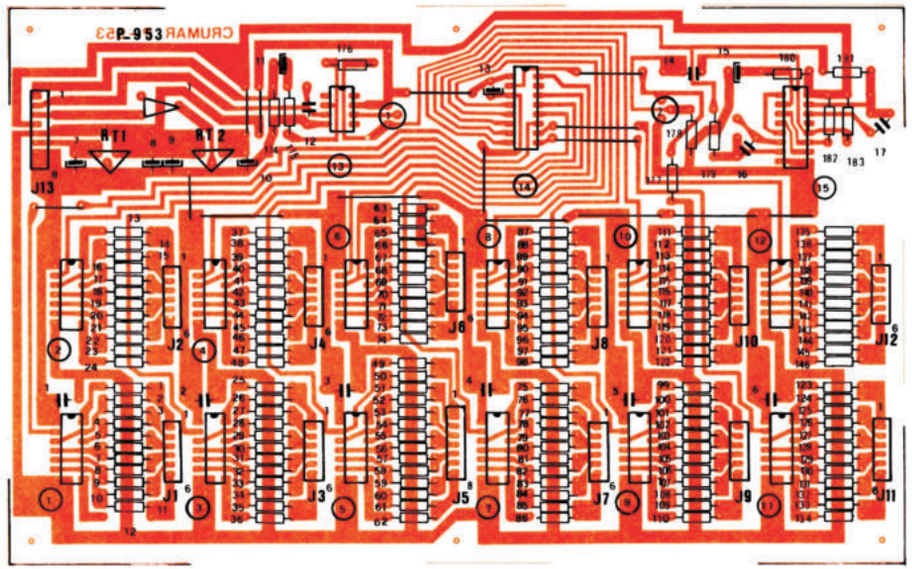



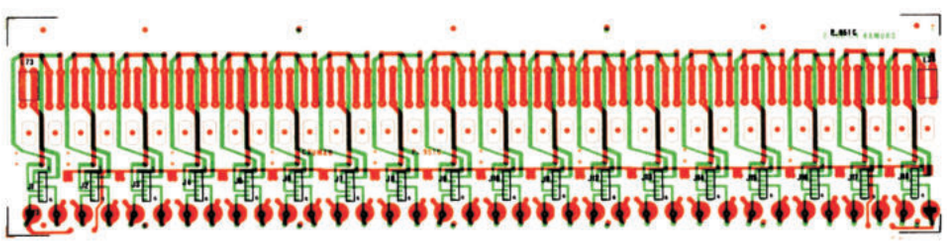



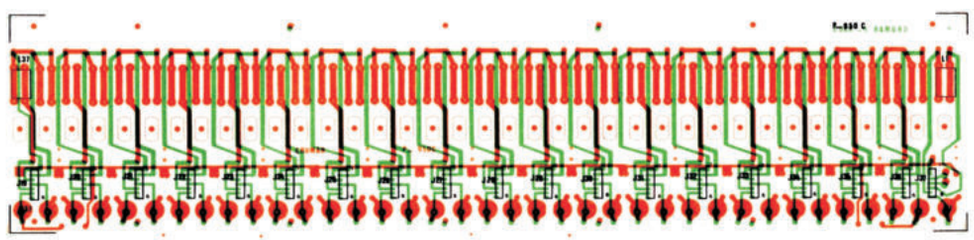

QUESTO DISEGNO E PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPIATO RIPRODOTTO MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA

| | | | | |
|---|---|---|---|---|
| CRUMAR | | MODEL: D.P. 50 | | |
| DRAWN BY | 16-9-81 | | REVISION | |
| DWG 1 | DESIGNED BY | | DATE | |



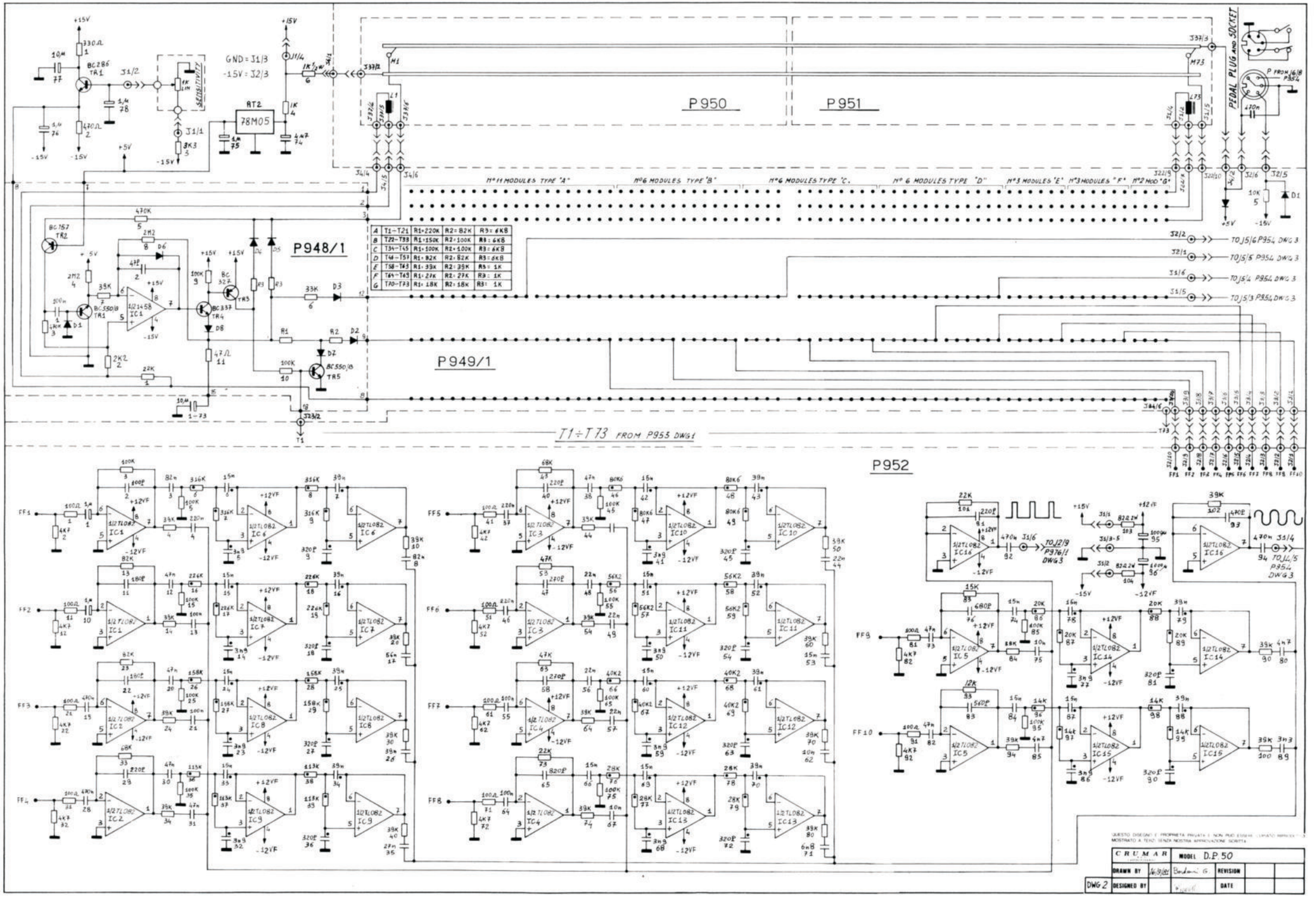



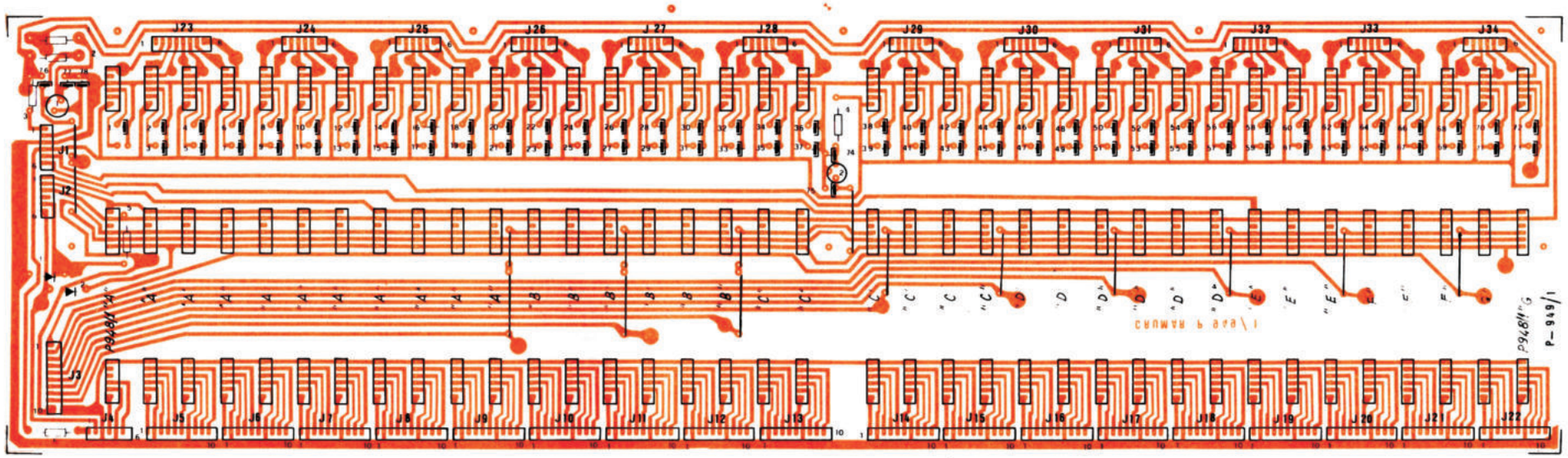


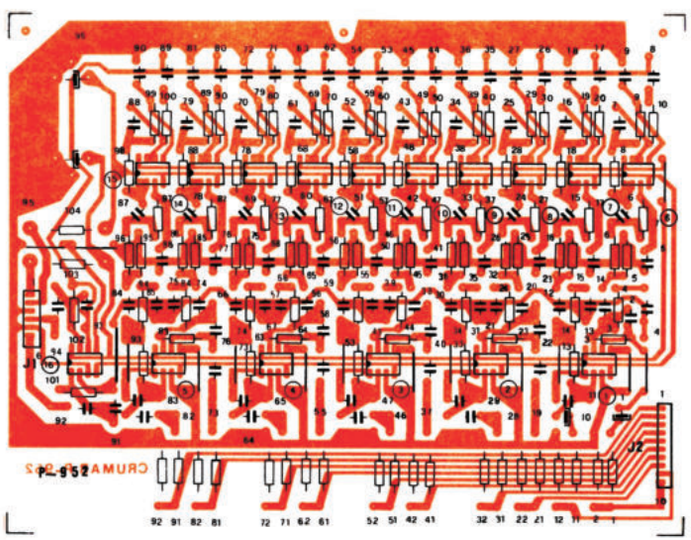
QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPIATO RIPRODOTTO MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA

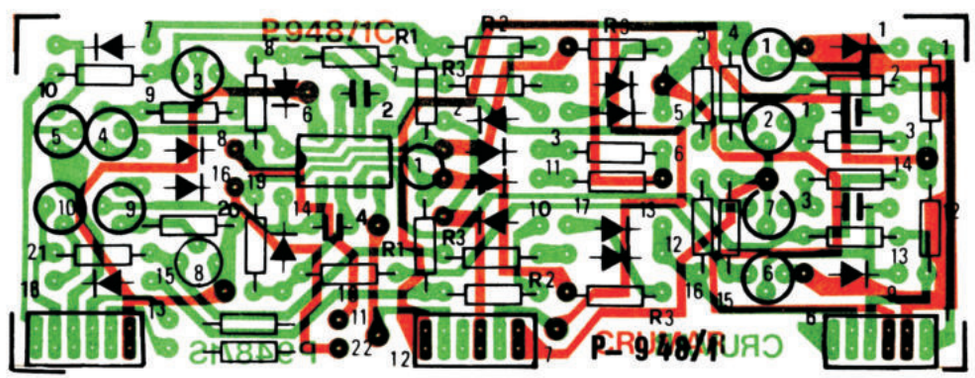
| | | | | | |
|---|---|---|---|---|---|
| | CRUMAR | MODEL D.P 50 | | | |
| | DRAWN BY | 16-9-81 | REVISION | | |
| DWG1A | DESIGNED BY | | DATE | | |




| | | | | |
|---|---|---|---|---|
| A | T1–T21 | R1=220K | R2=82K | R3=6K8 |
| B | T22–T33 | R1=150K | R2=100K | R3=6K8 |
| C | T34–T45 | R1=100K | R2=100K | R3=6K8 |
| D | T46–T57 | R1=82K | R2=82K | R3=6K8 |
| E | T58–T63 | R1=39K | R2=39K | R3=1K |
| F | T64–T69 | R1=27K | R2=27K | R3=1K |
| G | T70–T73 | R1=18K | R2=18K | R3=1K |

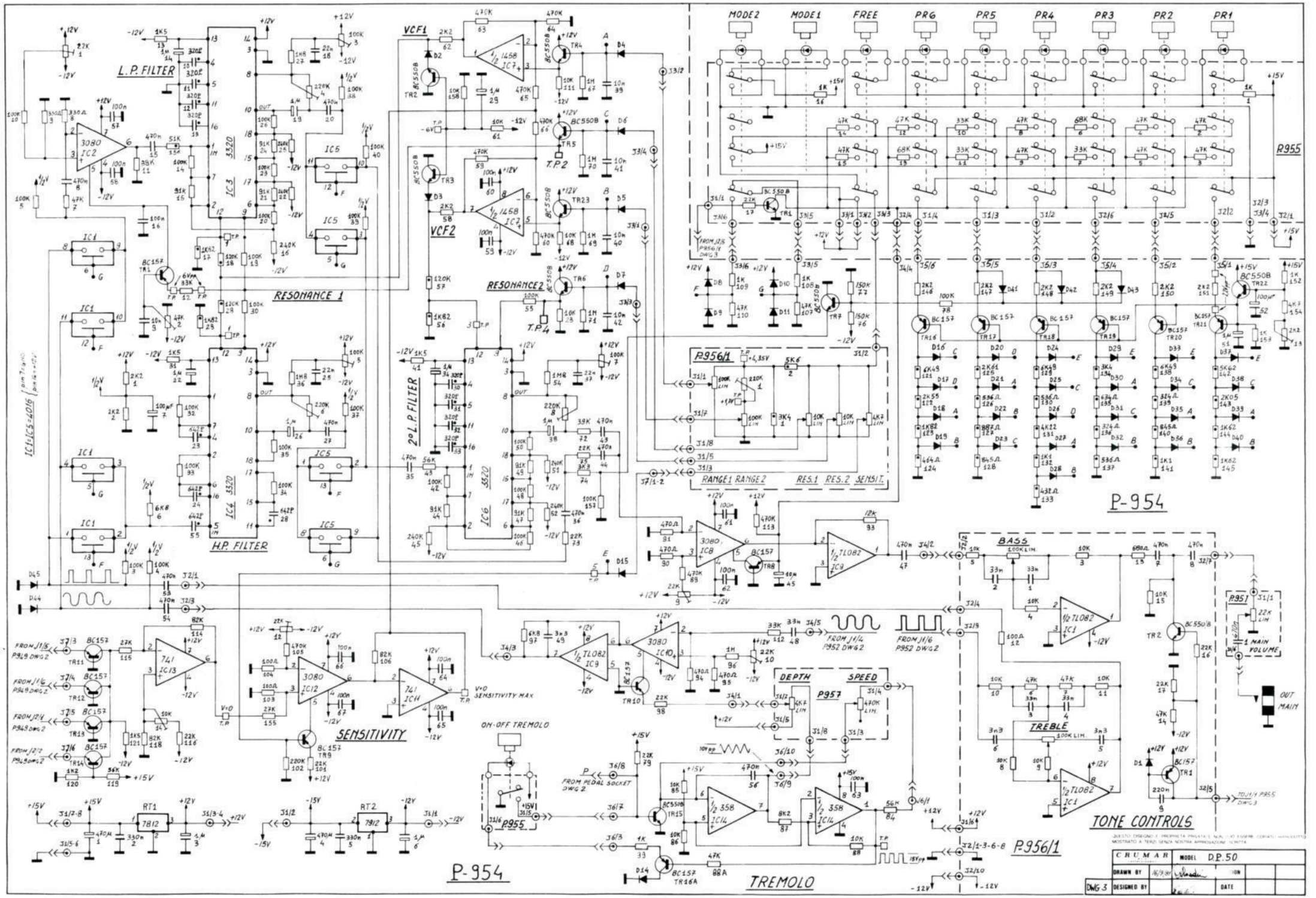


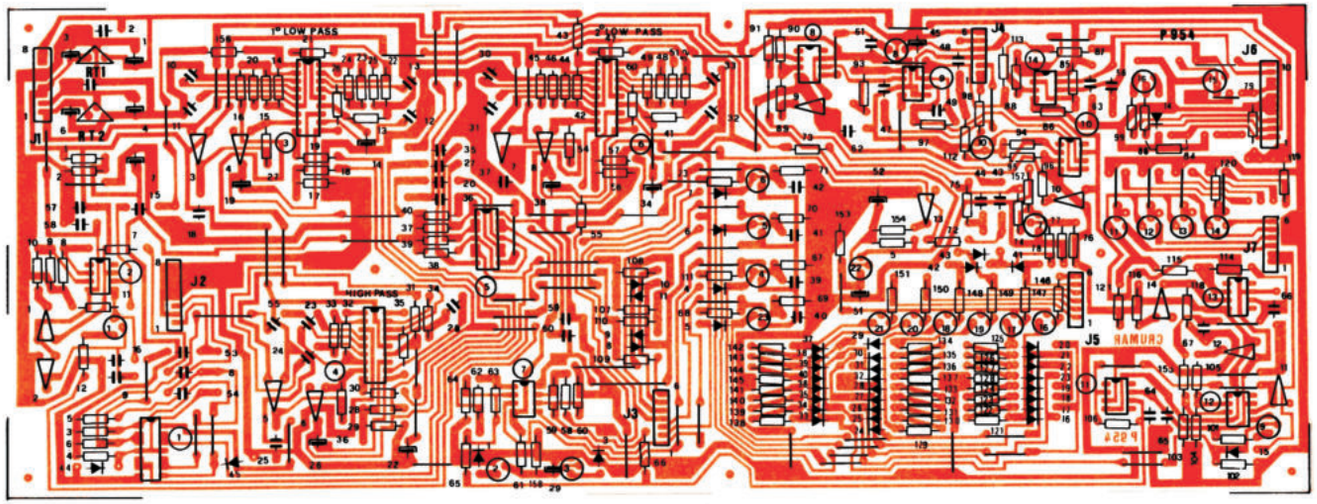



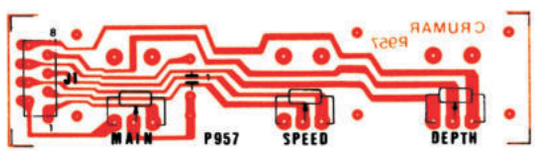

QUESTO DISEGNO È PROPRIETÀ PRIVATA E NON PUÒ ESSERE COPIATO, RIPRODOTTO MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA

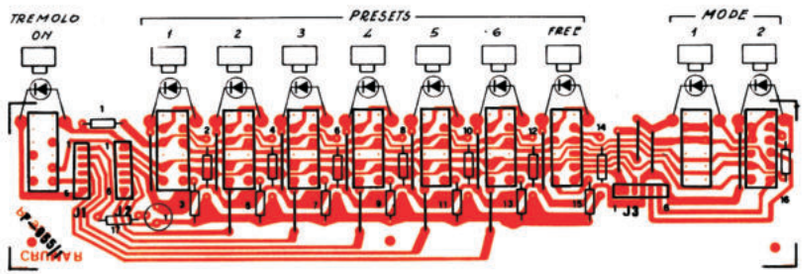
| | | | | | |
|---|---|---|---|---|---|
| | CRUMAR | MODEL | D.P. 50 | | |
| | DRAWN BY | 16-9-81 | REVISION | | |
| DWG 2A | DESIGNED BY | | DATE | | |

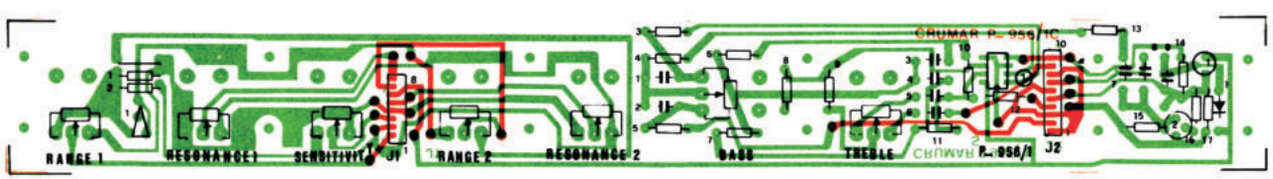

L.P. FILTER
H.P. FILTER
RESONANCE 1
RESONANCE 2
2° L.P. FILTER
VCF1
VCF2
P956/1
RANGE 1 RANGE 2
RES.1 RES.2 SENSIT.
MODE2 MODE1 FREE PR6 PR5 PR4 PR3 PR2 PR1
P955
P-954
BASS
TREBLE
TONE CONTROLS
P957
MAIN VOLUME
OUT MAIN
DEPTH
SPEED
SENSITIVITY
ON-OFF TREMOLO
TREMOLO
P-956/1
FROM PEDAL SOCKET DWG 2
CRUMAR
MODEL D.P.50
DRAWN BY
DESIGNED BY
DATE
DWG 3

| TEST POINTS | PR.1 | PR.2 | PR.3 | PR.4 | PR.5 | PR.6 | FREE |
|---|---|---|---|---|---|---|---|
| RANGE 1 T.P.1 (pin 12 IC 3-4) | +91mV | +40mV | +22mV | +22mV | +55mV | +55mV | -35mV → +145mV |
| RESONANCE 1 T.P.2 (Emitter TR5) | +4,1V | +1,2V | 0 | +5V | 0 | +10,2V | -0,5 → 11,2V |
| RANGE 2 T.P.3 (pin 12 IC6) | +28mV | +5mV | -18mV | -24mV | 36mV | -21mV | -37mV → +27mV |
| RESONANCE 2 T.P.4 (Emitter TR6) | 0 | 0 | 0 | 4,5V | 4V | 3,8V | 0 → 11,2V |
| SENSITIVITY T.P.5 (point E) | +10V | +8,1V | +4,3V | +11,7V | +0,6V | +0,6V | +0,6V → 11,3V |




QUESTO DISEGNO È PROPRIETÀ RIVALATA E NON PUÒ ESSERE COPIATO RIPRODOTTO MOSTRATO A TERZI SENZA NOSTRA APPROVAZIONE SCRITTA

| | | | | | |
|---|---|---|---|---|---|
| | CRUMAR | MODEL: D.P. 50 | | | |
| | DRAWN BY | 16-9-81 | REVISION | | |
| DWG3A | DESIGNED BY | | DATE | | |

| Schem. Ref. | Circuit | Type | Part Code |
|---|---|---|---|
| | **SEMKO VERSION - POWER SUPPLY (DWG 1)** | | |
| P960 | Complete with components | | 978002622 |
| RT1 | Voltage regulator | 7815 | 62110020 |
| RT2 | Voltage regulator | 7915 | 62110022 |
| PD1-2 | Rectifier Bridge | KBL04 | 66000006 |
| T65 | Trasformer | | 18010104 |
| | **CSA VERSION - POWER SUPPLY (DWG 1)** | | |
| P960 | Complete with components | | 978002623 |
| RT1 | Voltage Regulator | 7815 | 62110020 |
| RT2 | Voltage Regulator | 7915 | 62110022 |
| PD1-2 | Rectifier Bridge | KBL04 | 18010104 |
| T65 | Trasformer | | |
| | **MASTER OSCILLATOR AND DIVIDERS (DWG 1)** | | |
| P953 | Complete with components | | 978002615 |
| TR1 | TR | BC286 | 62110002 |
| TR2 | TR | BC550B | 62120005 |
| RT1 | Voltage regulator | 7812 | 62110027 |
| RT2 | Voltage regulator | 78L05 | 62110031 |
| IC1 ÷ 12 | Dividers | | 68010181 |
| IC13 | Op. Ampl. | 741 | 68000059 |
| IC14 | T.O.S. | 50240 | 68000009 |
| IC15 | Master Oscillator | 74LS221 | 68000058 |
| | **E ÷ E KEYSWITCHES (DWG 2)** | | |
| P950 | Complete with components | | 978002612 |
| L1 ÷ L37 | Coils | | 02020017 |
| | **F ÷ E KEYSWITCHES (DWG 2)** | | |
| P951 | Complete with components | | 978002613 |
| L38 ÷ L73 | Coils | | 02020017 |
| | **ENVELOPE MODULE "A" R1 = 220 K (DWG 2)** | | |
| P948/1 | Complete with components | | 978002645 |

MODEL D.P. 50 ELECTRONIC COMPONENT LIST

| Schem. Ref. | Circuit | Type | Part Code |
|---|---|---|---|
| | **ENVELOPE MODULE "B" RI = 150 K (DWG 2)** | | |
| P948/1 | Complete with components | | 978002646 |
| | **ENVELOPE MODULE "C" RI = 100 K (DWG 2)** | | |
| P948/1 | Complete with components | | 978002647 |
| | **ENVELOPE MODULE "D" RI = 82K (DWG 2)** | | |
| P948/1 | Complete with components | | 978002648 |
| | **ENVELOPE MODULE "E" RI = 39K (DWG 2)** | | |
| P948/1 | Complete with components | | 978002649 |
| | **ENVELOPE MODULE "F" RI = 27K (DWG 2)** | | |
| P948/1 | Complete with components | | 978002650 |
| | **ENVELOPE MODULE "G" RI = 18K (DWG 2)** | | |
| P948/1 | Complete with components | | 978002651 |
| D1 ÷ 16 | Diodes | 1N4149 | 65000007 |
| TR1-5-6-10 | TR | BC550B | 62120005 |
| TR2-7 | TR | BC157 | 62210007 |
| TR3-8 | TR | BC327 | 62110039 |
| TR4-9 | TR | BC337 | 62110038 |
| IC1 | Dual. Op. Ampl. | 1458 | 68000054 |
| | MODULE'S MOTHER BOARD (DWG 2) | | |
| P949/1 | Complete with components | | 978002644 |
| TR1 | TR | BC286 | 62110002 |
| TR2 | Voltage regulator | 78L05 | 62110031 |
| D1-D2 | Diodes | IN4001 | 66000004 |
| | **FLUTE FILTERS (DWG 2)** | | |
| P952 | Complete with components | | 978002614 |
| IC1 ÷ 16 | Dual Op. Ampl. | TL082 | 68030163 |

| Schem. Ref. | Circuit | Type | Part Code |
|---|---|---|---|
| | **PRESETS SWITCHES (DWG 3)** | | |
| P955/1 | Complete with components | | 978002655 |
| TR1 | TR | BC550/B | 62120005 |
| | **PIANO'S FILTERS AND PRESETS (DWG 3)** | | |
| P954 | Complete with components | | 978002616 |
| D1 ÷ 45 | Diodes | BA130 | 65000001 |
| TR1-8 ÷ 16-16A 17 ÷ 21 | TR | BC157 | 62210007 |
| TR2÷7-15-22-23 | TR | BC550/B | 62120005 |
| IC1-5 | Quad bilateral. switch. | 4016 | 68000072 |
| IC2-8-10-12 | O.T.A. | 3080 | 68000066 |
| IC3-4-6 | Voltage controlled filter | 3320 | 68030143 |
| IC7 | Dual Op. Ampl. | 1458 | 68000054 |
| IC9 | Dual Op. Ampl. | TL082 | 68030163 |
| IC14 | Dual Op. Ampl. | LM358 | 68000093 |
| IC11-13 | Op. Ampl. | 741 | 68000059 |
| | **MAIN-VIBRATO CONTROLS (DWG 3)** | | |
| P957 | Complete with components | | 978002619 |
| | **RANGE-RESONANCE-TONE CONTROLS (DWG 3)** | | |
| P956/1 | Complete with components | | 978002641 |
| D1 | Diode | BA130 | 65000001 |
| TRI | TR | BC157 | 62210007 |
| TR2 | TR | BC550/B | 62120005 |
| ICI | Dual Op. Ampl. | TL082 | 68030163 |
| | **CONNECTION BOARD** | | |
| P961 | Complete with components | | 978002624 |

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